

### **Abstract**

An object of the invention is to provide a transmitter high in efficiency, good in linearity and capable of covering an output level in a wide range.

Either linear operating mode or saturation operating mode is set as the operating mode of a high-frequency power amplifier (15) on the basis of an operating mode set signal (107). The gain of a variable gain amplifier (14) provided in front of the high-frequency power amplifier (15) and values of output voltage (109) and bias current supplied from a supply voltage/bias current control circuit (17) to the high-frequency power amplifier (15) are switched. The gain of the variable gain amplifier (14) in the saturation operating mode is formed so as to be higher by a predetermined value than that in the linear operating mode. Accordingly, the high-frequency power amplifier 15 operates in the designated operating mode, so that the output transmission power range can be widened.